CORRES. CONTROL
OUTGOING LTR NO.

DOE ORDER #
94 RF 01297

EG&G ROCKY FLATS

00021534

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

DIST.	LTR	ENC
AMARAL, M.E.		
BENEDETTI, R.L.		
BENJAMIN, A.		
BERMAN, H.S.		
BRANCH, D.B.		
CARNIVAL, G.J.		
COPP, R.D.		
DAVIS, J.G.		
FERRERA, D.W.		
HANNI, B.J.		
HARMAN, L.K.		
HEALY, T.J.		
HEDAHL, T.		
HILBIG, J.G.		
KIRBY, W.A.		
KUESTER, A.W.		
MANN, H.P.		
MARX, G.E.		
McDONALD, M.M.		
McKENNA, F.G.		
MONTROSE, J.K.		
MORGAN, R.V.		
POTTER, G.L.		
PIZZUTO, V.M.		
RILEY, J.H.		
RISING, T.L.		
SANDLIN, N.B.		
SETLOCK, G.H.		
STEWART, D.L.		
SULLIVAN, M.T.		
SWANSON, E.R.		
WILKINSON, R.B.		
WILLIAMS, S. (ORC)		
WILSON, J.M.		
WYANT, R.B.		
[illegible]	X	X
K. Lockhart	X	
J. Mellen	X	
E.H.C.	X	X
File (S)	X	X
CORRES CONTROL	X	X
ADMIN RECORD		
PATS/T130G		
TRAFFIC		

CLASSIFICATION:

UCNI		
UNCLASSIFIED		
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
DOCUMENT CLASSIFICATION ~~REVIEW WAIVER PER~~ CLASSIFICATION OFFICE
DATE

IN REPLY TO RFP CC NO:

ACTION ITEM STATUS
☐ PARTIAL/OPEN
☐ CLOSED
LTR APPROVALS:
ORIG & TYPIST INITIALS
KCL:jec

RF-4646a (Rev. 7/93)

January 31, 1994

94-RF- 01297

Frazer Lockhart
Environmental Restoration Division
DOE, RFO

SUPPORT TO 750 PAD TANK INTERIM STATUS APPROVAL - SRK-018-94

The change to interim status approval from the CDH for the sludge tanks included several conditions, which we have been working with your staff to address. This letter documents two EG&G responses to CDH requests. Your staff has participated in both responses.

1) In the approval to the change to interim status, CDH required that the contents of a representative portion of the tanks be sampled. EG&G offered to present the previous pond sludge characterization results to CDH to determine if the existing data will meet CDH needs. That presentation was made on January 18, 1994. The charts presented and a summary of the discussion are attached. Copies of the sampling plan and report of results were provided to the CDH. CDH staff did not decide in the meeting if additional sampling would still be required, but will contact us after they have reviewed the documents provided. This approval-condition would impact project cost, but does not impact the schedule for emptying Pond 207 B and Pond 207 C.

2) The CDH has performed two inspections, as mentioned in the approval condition addressing certification. EG&G coordinated and led the inspection tours on January 5 and January 20, 1994. On the first tour, a plant photographer took several pictures under CDH direction. A set of prints have been delivered to the CDH and a copy of the set is attached. The inspections do not impact the schedule for sludge transfer.

If you would like to discuss these actions further, please call me at 966-8541, or Joe Mellen, at 966-8607.

S.R. Keith
Program Director
Solar Pond Projects

KCL:jec

Attachments:
As Stated

Orig. and 1cc: F. R. Lockhart

cc:
S. Howard - DOE,RFO w/o attachmetns
D. Mauer - DOE,RFO
S. Surovchak - DOE,RFO w/o attachments
M. Witherill - DOE,RFO

DOCUMENT CLASSIFICATION
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CLASSIFICATION OFFICE

ADMIN RECORD

A-OU10-000249

Radioactive Constituents in Sludge

- **Radioactive constituents will have no affect on tanks**

- **Radiation levels very low**
  - A/B Ponds: 38 pCi alpha/g; 27 pCi beta/
  - C Pond : 5000 pCi alpha/g 710 pCi beta/g

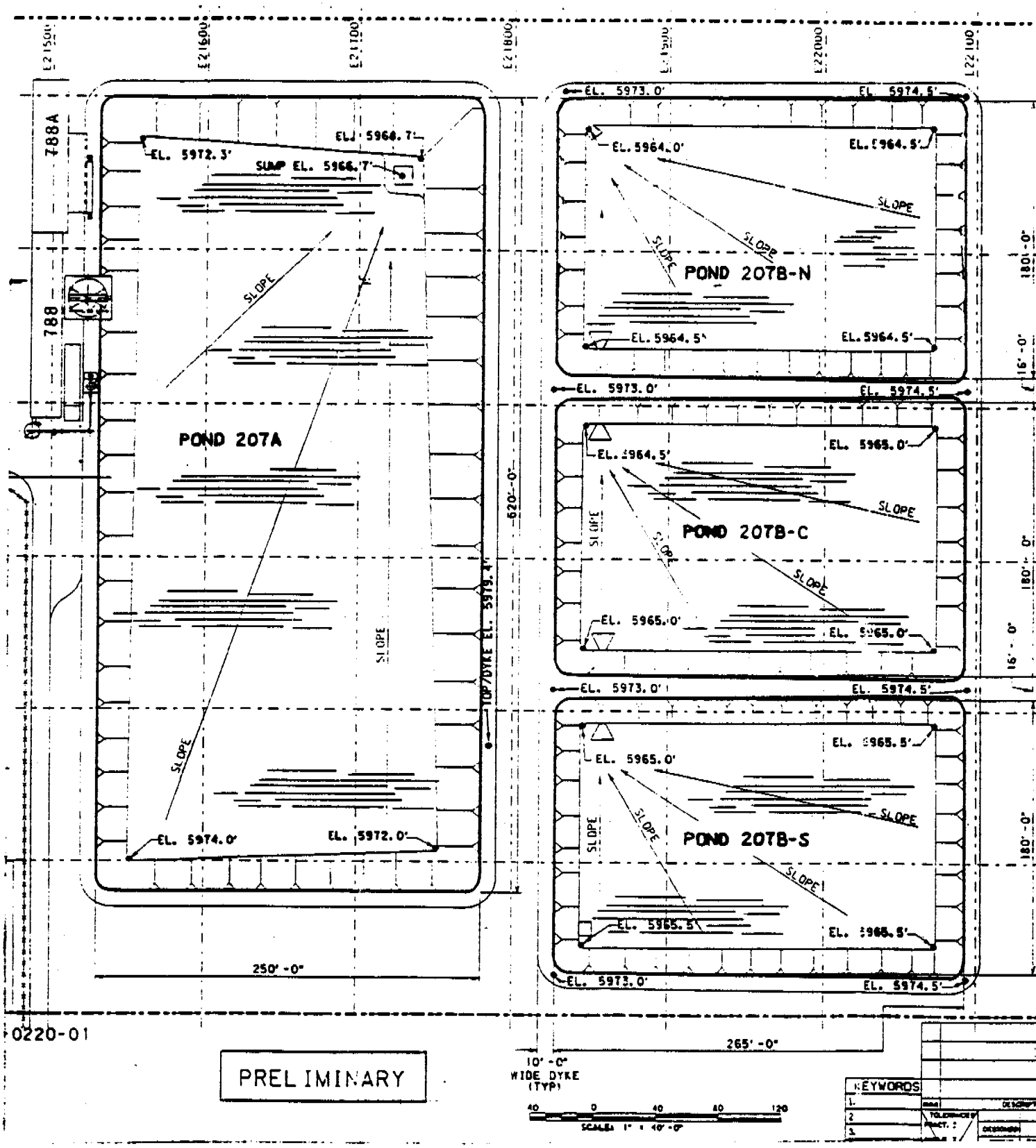
  - DOT non-radioactive: <2000 pCi/g
  - DOT LSA: <100,000 pCi/g

- **Estimated "dose" to tank wall 0.07% of level that affects crosslinked polyethylene**

207 A AND B-SERIES PONDS

POND SLUDGE AND POND WATER CHARACTERIZATION SAMPLING

Halliburton NUS


E21500
E21600
E21100
E21800
E22000
E22100
788A
788
POND 207A
EL. 5968.7'
EL. 5972.3'
SUMP EL. 5966.7'
SLOPE
EL. 5974.0'
EL. 5972.0'
TOP DYKE EL. 5979.4'
620'-0"
250'-0"
POND 207B-N
EL. 5973.0'
EL. 5974.5'
EL. 5964.0'
EL. 5964.5'
POND 207B-C
EL. 5965.0'
POND 207B-S
180'-0"
16'-0"
265'-0"
10'-0" WIDE DYKE (TYP)
SCALE: 1" = 40'-0"
0220-01
PRELIMINARY
KEYWORDS

PURPOSE

To obtain representative water and sludge samples from the clarifier and solar ponds, for the purposes of physical and chemical characterization and treatability study.

The analyses may include the following:

- total cyanide
- metals
- inorganic anions and inorganic constituents
- organic constituents
- levels of radioactivity
- engineering and geotechnical parameters

SAMPLING SUMMARY

- HNUS prepared a Standard Operating Procedure (SOP) for Pondsludge Sampling
- SOP based on screening data by EG&G laboratories for radiation content
- Previous sampling and Waste operations estimated the sludge thickness at approximately 8 inches.

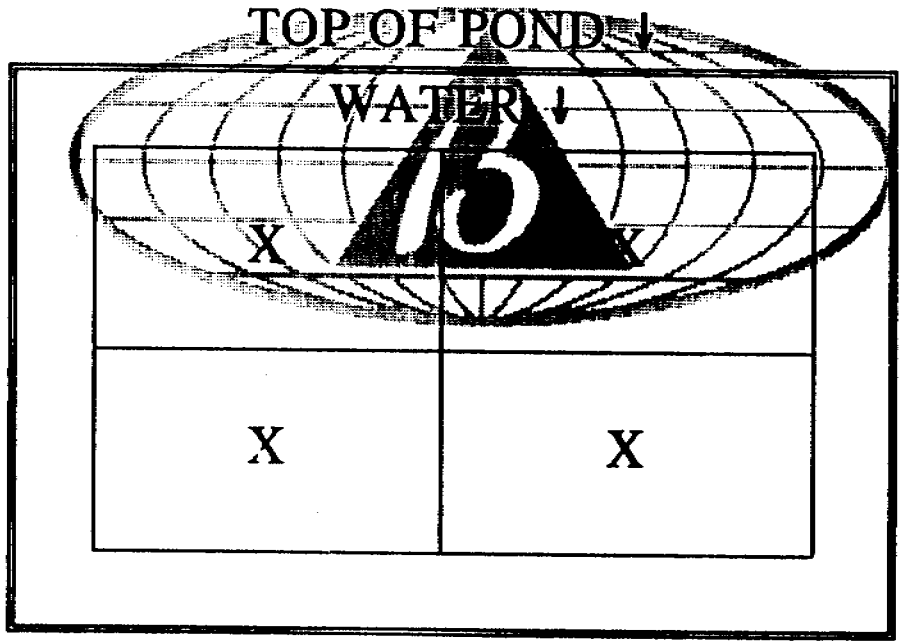
SAMPLING OVERSITE

Oversite was provided by:

- Halliburton NUS - responsible for the sampling and analysis;
- Brown & Root - present for process engineering data gathering;
- Roy F. Weston Company presence - requested by EG&G, as they had formally performed the pond sampling.

SAMPLING LOCATIONS

- Four sampling locations per pond
- Sample at the center of each quadrant
- Accepted method.



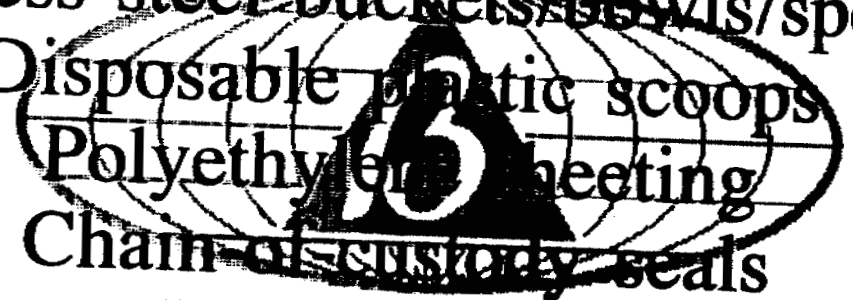
DESCRIPTION OF BOAT

- 7 Foot long, 2 seater, fiberglass construction (fishing boat)
- 550 pound maximum weight limit
- No motor
- 200 feet of rope attached to bow and stern to allow personnel on the shore to guide the boat to the desired sampling location.
- All sampling performed from a sitting position

SAMPLING EQUIPMENT

Teflon Sample dipper - Pond Water
10-foot sludge coliwasa - Pond Depth
Ponar™ clamshell dredge - Pond Sludge

Stainless steel buckets/bowls/spoons
Disposable plastic scoops
Polyethylene sheeting
Chain-of-custody seals
Sample coolers
Frozen gel-packs



Halliburton NUS

POND WATER SAMPLING

At each sampling location:

» The Volatile Organic Compound (VOC) water sample was taken using the dipper.

- The sample was taken 1 foot below the surface.
- If there was less than 1 foot of water present, the sample was taken directly above the sludge layer.
- The sample was poured into VOC vials.
- A cap was screwed onto each VOC vial.
- The samplers ensured that there were no air bubbles in the sample bottle.

POND WATER SAMPLING, cont.

- A minimum of 3 gallons of pond water was collected using the dipper and a labelled stainless steel bucket (NW, SE).

- The samplers returned to shore, and moved the samples from the boat to the sample preparation/decon area.

- The other pond water sample bottles (½-gallon, 1-gallon) were filled at the sample preparation area.

POND WATER SAMPLING, cont.

Pond Water Sample Containers

QTY	BOTTLE SIZE/TYPE	SAMPLE PURPOSE
3	40 ml Glass VOC	VOC, Alcohol
2	½-gallon Amber Glass	Selected Semi-Vol
2	1 gallon Plastic	Cyanides, Metals, Anions, Rad, Geotech

- Each sample bottle was decontaminated and "smeared" prior to affixing a sample label.
- While decontaminating and labelling the the samplers moved to the next quadrant.

DEPTH SAMPLING

- Depth sampling included measurement of the sludge layer thickness and total pond depth.

- The depth sampling would be used to:
  - calculate the volume of sludge and water contained in the ponds; and
  - confirm that the clamshell dredge was adequate for the sampling.

- The SOP called for depth sampling using a 1-inch diameter Teflon Coliwasa

DEPTH SAMPLING, cont.

- National Well Company Lagoon Sampler has:
  - a Blue-shaded Transparent PVC outer tube
  - a well-field industry diaphragm to ensure sealing the tube.
- The depths were measured in 16 locations.

POND	RANGE	AVERAGE	
207A	0 - 4½"	< 0.5"	
B-NORTH	2¾ - 5"	3.4"	
B-CENTER	0 - 10½"	3.4"	1 > 5"
B-SOUTH	0 - 5½"	2.0"	

Halliburton NUS

POND SLUDGE SAMPLING

- All Pond Water and Depth sampling for each pond was completed prior to Sludge Sampling.

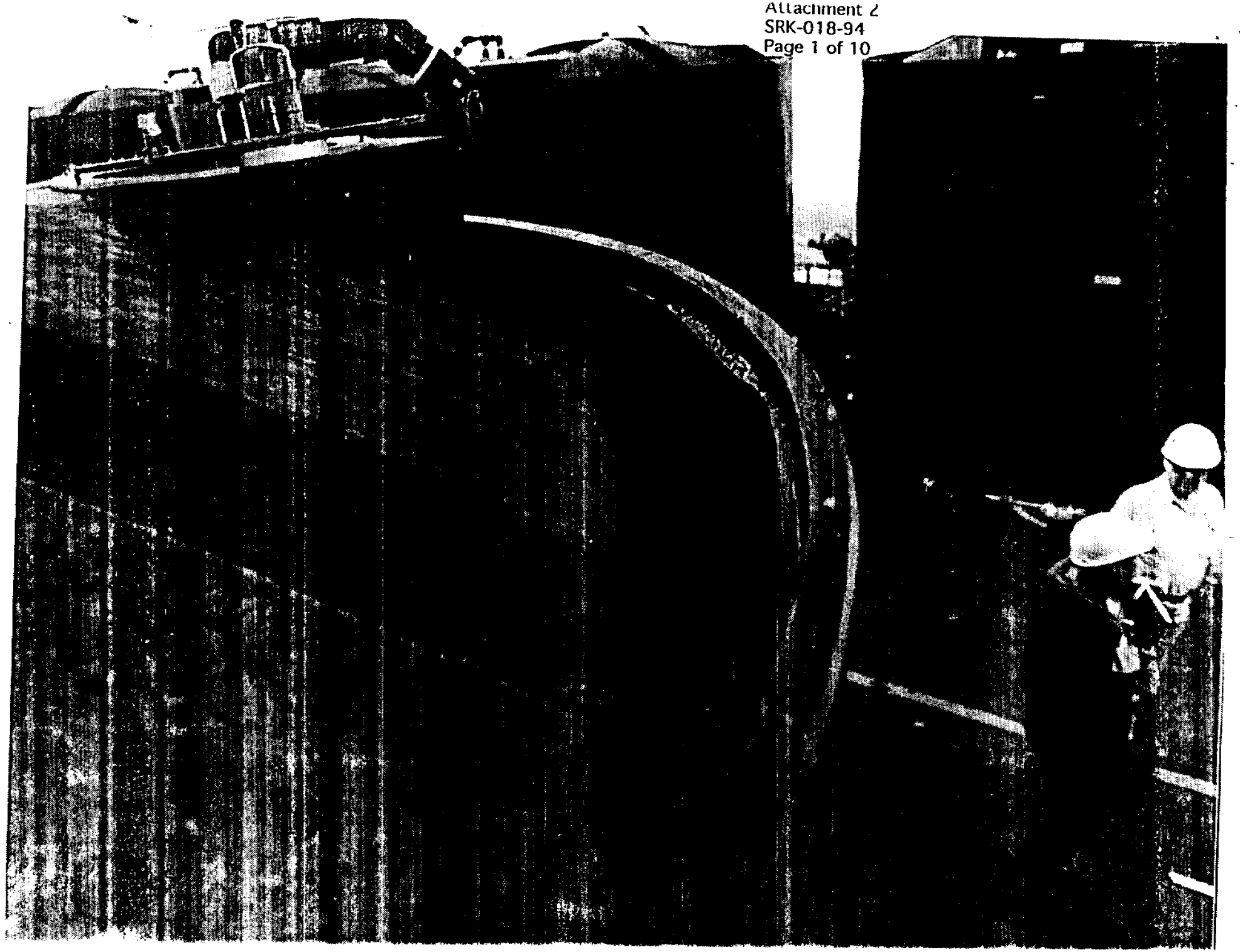
- The sludge sample was taken at the center of each quadrant with the clamshell dredge.
  - The dredge was dropped through the water layer and into the sludge layer.
  - The dredge was activated by dropping the weight down the rope.
  - The dredge was pulled out of the water in an upright position.
  - The water was decanted from the sludge.

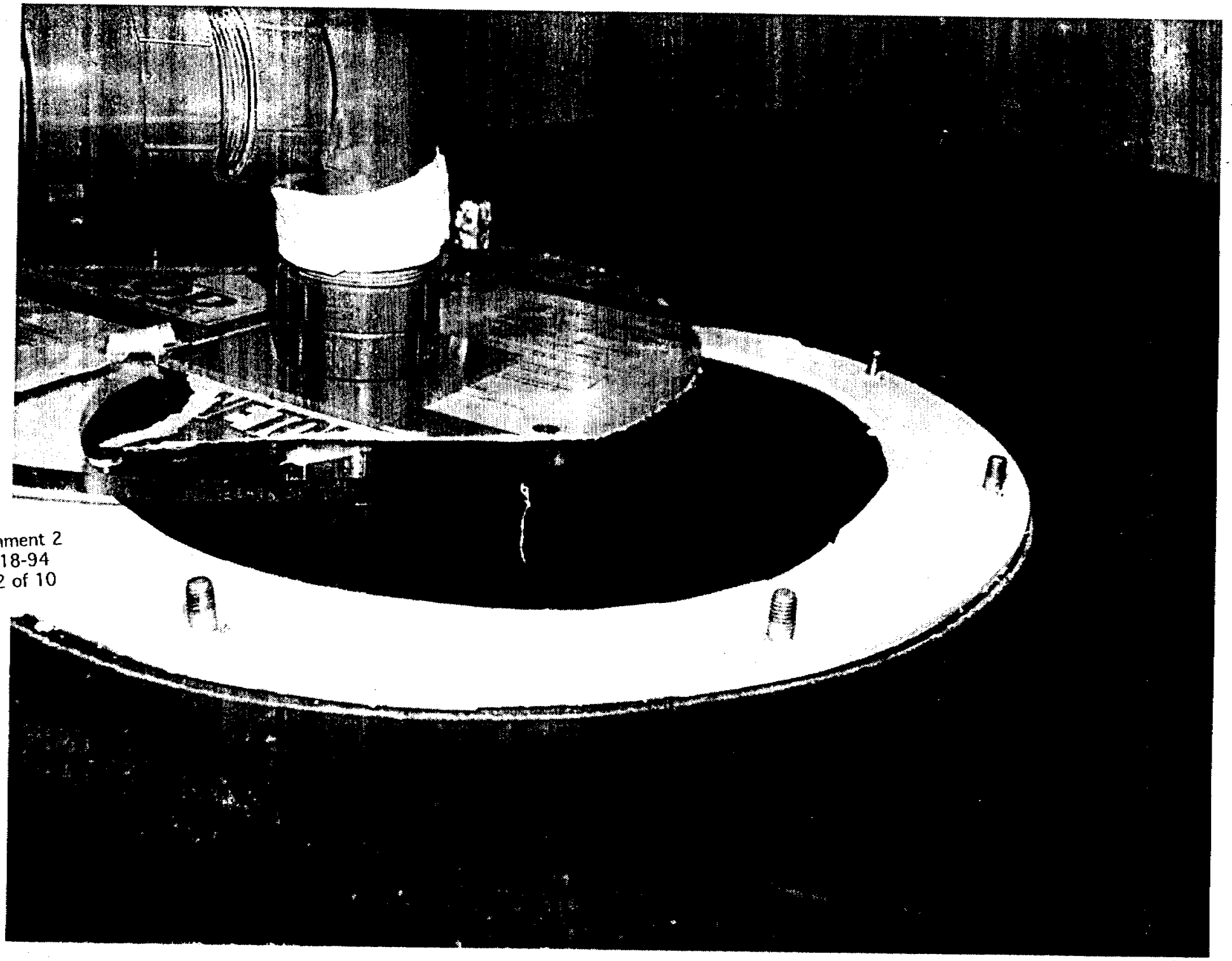
POND SLUDGE SAMPLING, cont.

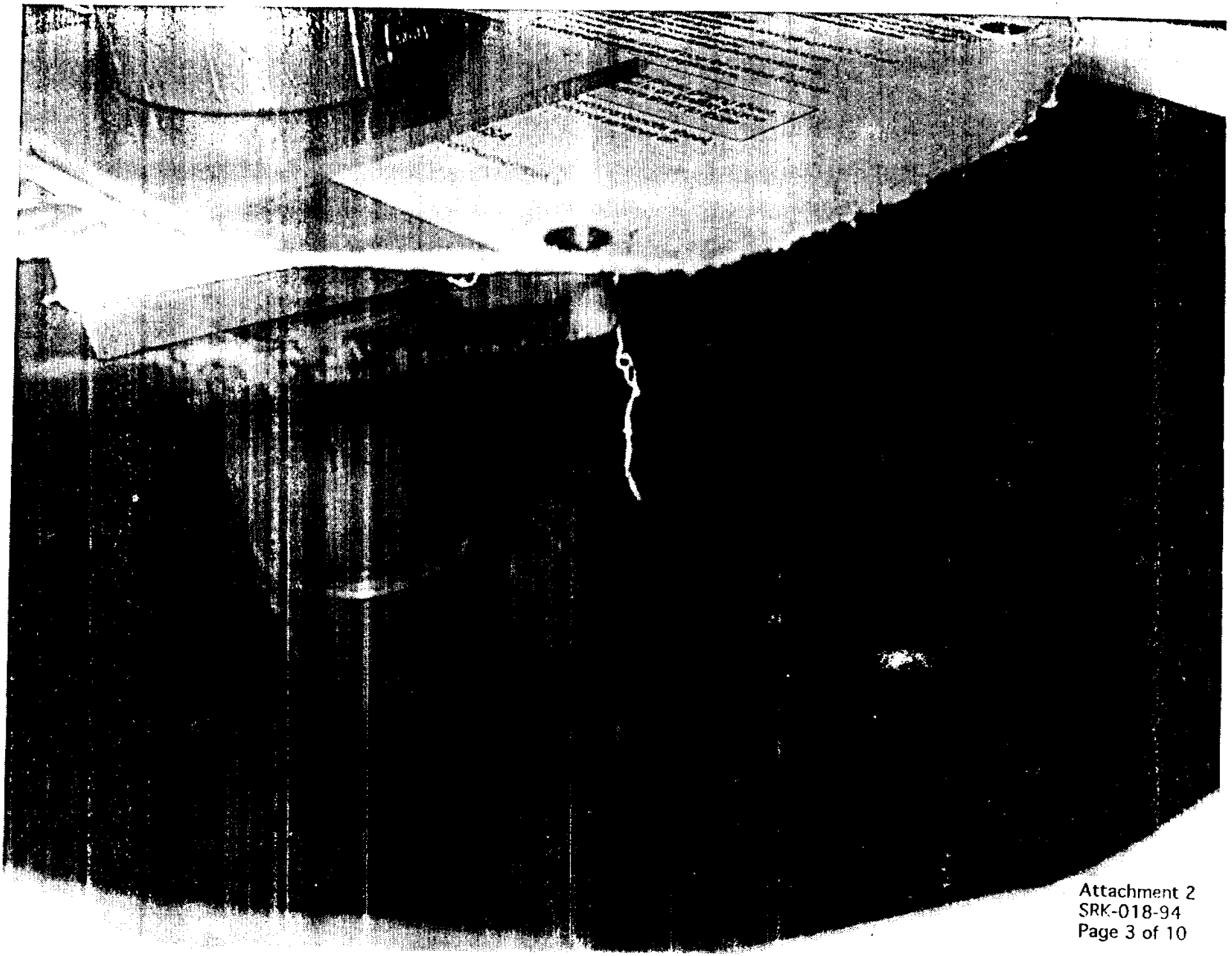
- The sludge was emptied into a stainless bowl.
- Repeated until a minimum of 2 gallons of sludge was collected.
- Using the disposable plastic scoop, the pondsludge was carefully mixed, and transferred to bottles.

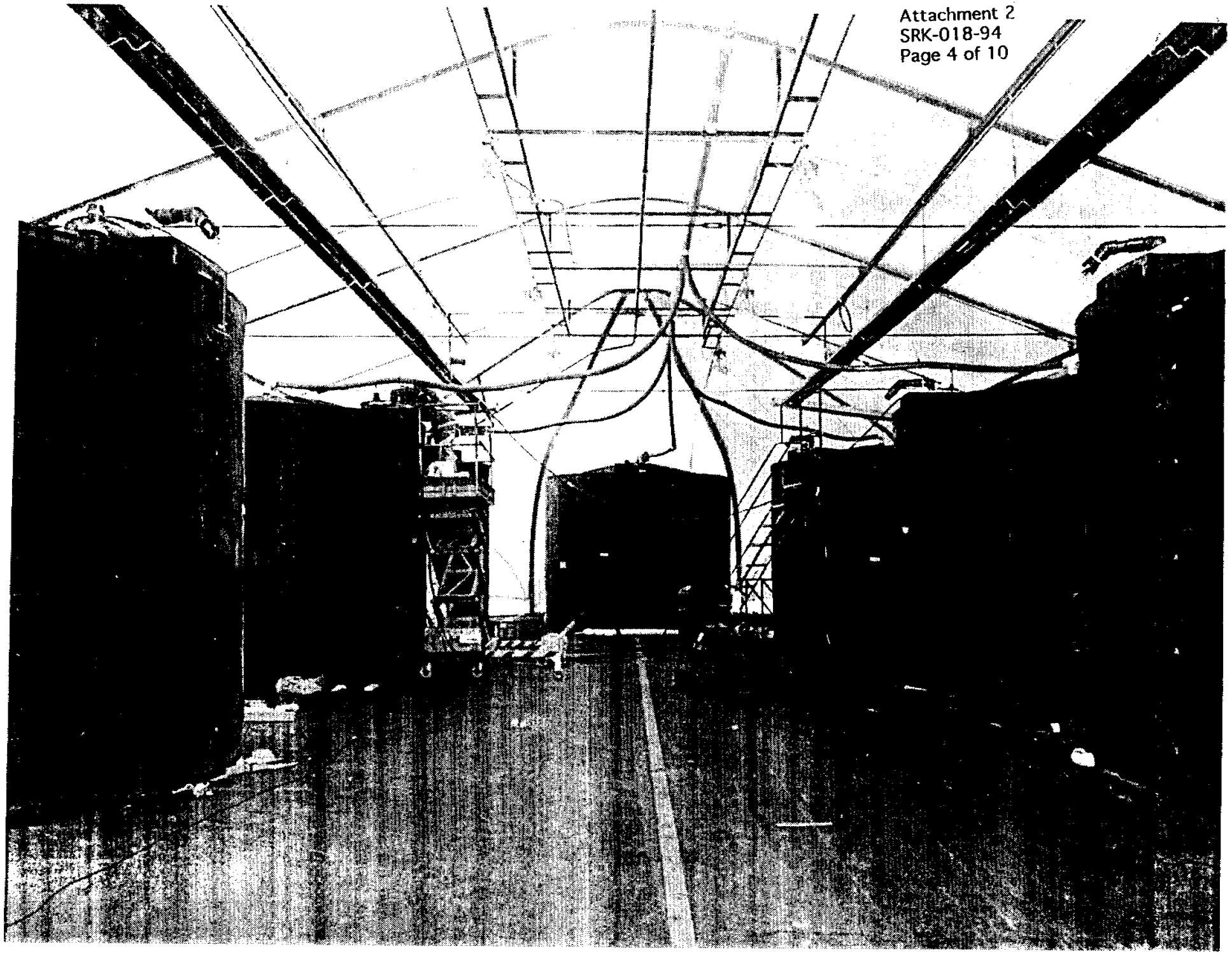
POND SLUDGE SAMPLE CONTAINERS

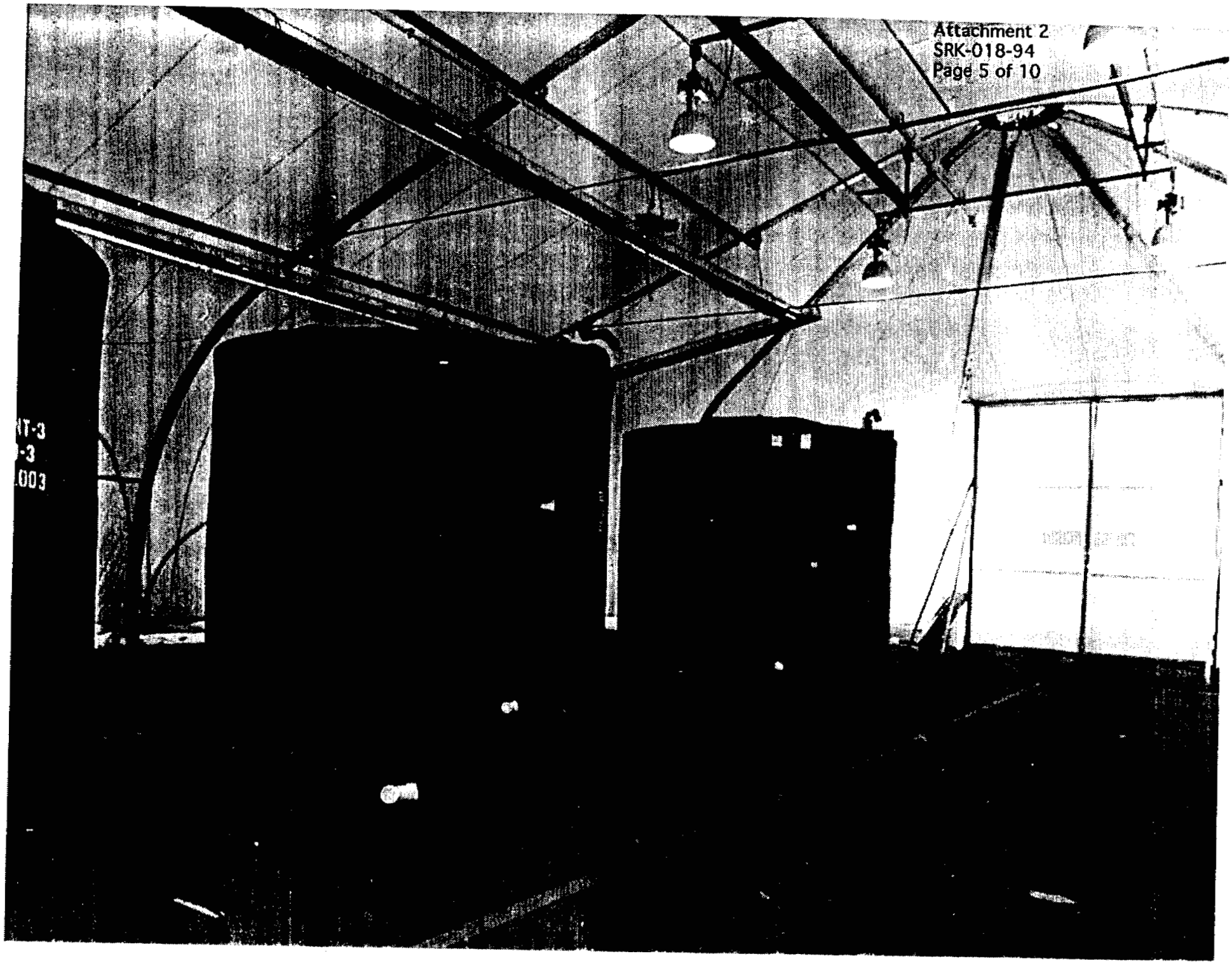
QTY	BOTTLE SIZE/TYPE	SAMPLE PURPOSE
2	4 oz. Jars	Selected VOC's, Geotech
6	32 oz. Jars	Cyanides, Metals, Anions, Rad, Geotech










NT-3
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003


Attachment 2
SRK-018-94
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